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# Regional Groupings Among Microstates

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This model shows that a microstate's decision to form, expand, or join a regional organization is based on reduced negotiating costs and increased bargaining power, rather than on the traditional costs and benefits of trade integration.



## Summary findings

Forming a regional grouping with neighboring nations may be one way for microstates to overcome a major problem: Because of their weak bargaining power and high fixed costs of negotiation, microstates are at a severe disadvantage in dealing with the rest of the world. They don't have the human and physical resources to unilaterally conduct the various bilateral and multilateral negotiations a developing nation typically conducts.

Andriamananjara and Schiff present a model in which the decision to form, expand, or join a regional "club" is based on reduced negotiating costs and increased bargaining power, rather than on the traditional costs and benefits of trade integration (which might be miniscule for a microstate and might even generate welfare losses).

Under various conditions for entry, the model is used to determine the equilibrium group size, which is shown to be positively correlated with the number of issues to be tackled, the degree of similarity among countries, and the per-issue costs of international negotiation.

They use the case of the Caribbean Community (CARICOM) to show the model's relevance in the real world. The countries that belong to CARICOM pooled their negotiating resources and formulated common policy stances. Despite its relatively limited impact on trade and investments, CARICOM served as a political instrument in joint negotiations on trade and investment with larger countries and regional trade blocs. By establishing a union, the CARICOM countries succeeded in making their voices heard on a variety of issues in a way none of them could have done alone.

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This paper — a product of the Development Research Group — is part of a larger effort in the group to examine the economics of regionalism and development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address [ltabada@worldbank.org](mailto:ltabada@worldbank.org). Maurice Schiff may be contacted at [mschiff@worldbank.org](mailto:mschiff@worldbank.org). May 1998. (33 pages)

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# ***Regional Groupings among Microstates***<sup>\*</sup>

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## 1. Introduction

“Microstates”<sup>1</sup> face severe disadvantages in their dealing with the rest of the world due to low bargaining power and high fixed costs of negotiation. Due to their small size, microstates do not usually possess the needed human and physical capacities to unilaterally conduct the various bilateral and multilateral negotiations that are typical for developing nations. In addition to the traditional costs and benefits of regionalism which are widely discussed in the literature, forming a regional grouping with neighboring nations may help a country share its fixed negotiation costs and increase its bargaining power. And, as the world has become increasingly more integrated and the number of issues to be dealt with in the international arena has grown, the need for microstates to integrate with their neighbors has grown as well.

This paper presents a model in which the decision to form, expand or join a regional grouping is based on negotiation costs and bargaining power rather than on the traditional costs and benefits of trade integration. This is particularly relevant in the context of microstates where trade integration itself might only bring minuscule benefits given the narrow range and the similarity of goods produced. Such integration is in fact likely to generate welfare losses. Panagaryia (1995) shows under some realistic assumptions that a regional trade integration between small countries whose terms of trade are given exogenously results in a welfare loss for the bloc as a whole<sup>2</sup>.

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<sup>1</sup> The term “microstate”, according to the definition of the United Nations, denotes a state with a population numbering one million or less. In this paper, the term is broadly used to denote very small countries.

<sup>2</sup> A similar analysis is found in Schiff (1997), where it is shown that this result need not hold in the case of smuggling.

The main benefits of integration among microstates are likely to be the savings in negotiation costs and the enhanced bargaining power. Small Caribbean nations, for example, have increased their bargaining power through the establishment of the Caribbean Community (CARICOM) under which they have pooled their negotiation resources and have formulated common policy stances<sup>3</sup>.

In order to understand the basic questions addressed in this paper, consider a number of microstates, each of which has to negotiate with a multitude of international agencies on different issues. One scenario (the non-cooperative one) would be that each country sets its own policy stances and unilaterally negotiates with all the foreign agencies. Another scenario (the cooperative one) would be one where a subset (or possibly all) of the countries set their joint positions through some regional negotiation mechanism. A regional authority (a “Secretariat”), then, defends the countries' common economic or political interests in the negotiations with the rest of the world. The questions addressed below are: (i) Under what circumstances would the latter scenario be the chosen arrangement between the countries, (ii) what would the equilibrium group size be, and (iii) what would the optimal group size be?<sup>4</sup>

Forming a regional grouping is likely to have a number of attractive characteristics from the point of view of each individual countries. First, international negotiations require substantial financial resources, time and expert knowledge that are limited in microstates and could be used more efficiently in other areas. Microstates can gain by acting together in

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<sup>3</sup> The case of CARICOM is discussed in further detail in Section 4.

<sup>4</sup> As argued later, the optimal group size may differ from the equilibrium one due to externalities.

articulating shared interests and sharing the fixed costs of international negotiation. Combining their negotiations resources would give them larger market power, and thus, larger negotiation power. For instance, the establishment of a regional union allows the countries to play the “logrolling” game (“I vote for your issue if you vote for mine”) by trading support for each other’s issues which might help them get what they could not get on an unilateral basis<sup>5</sup>.

Second, the existence of a visible regional authority may attract more foreign aid since it is easier for the donor community to deal with the group as one entity rather than to deal individually with each single country. Common regional activities have emerged in order to attract higher volumes of external financial resources (Inotai, 1991). It is more attractive for USAID or the EU to provide assistance to CARICOM than to give aid to St. Kitts and Nevis, to Belize and to others individually.

On the other hand, by joining a regional group, a country may have to sacrifice some of its preferred positions even before the international negotiation process begins. The group members will need to agree on an negotiation platform among themselves. The process leading to this platform could be costly and cumbersome, especially if the group size is large. Setting up a Secretariat, or deciding on its institutional characteristics might also require a lot of resources and expertise. However, if the countries are similar, it is likely that they will have similar preferences. This will reduce the cost of reaching a joint policy stance.

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<sup>5</sup> On the issue of regionalism versus multilateralism, it has been argued that if small countries negotiate as a group, then the efficiency of the negotiations will increase, and a satisfactory worldwide multilateral agreement will be more likely (Frankel and Wei, 1995; Krugman, 1993).

By establishing a regional Club<sup>6</sup>, the member countries save on the costs of international negotiation, but incur the costs of negotiating between themselves to reach common policy stances. In other words, they avoid duplication of external bargaining costs but incur, instead, internal bargaining costs. The equilibrium agreement will depend on the relative importance of the two types of costs as well as on any benefits from enhanced bargaining power.

The paper is organized as follows. In the next section, a model based on negotiation costs is built and some implications are presented. The likelihood of the establishment of a regional grouping as well as the group size are shown to depend on the membership condition, the degree of similarity among the countries, the degree of autonomy of the regional secretariat, and the number of issues to be negotiated. In the real world, this latter may sometimes be an endogenous variable, that is: countries choose the number of issues that would maximize their net benefits. In the third section, the basic model is modified to take account of this possibility. The results from the second section are not dramatically altered. It is shown that the possibility of log-rolling increases both the likelihood of collective action and the equilibrium group size. Section 4 presents a case study of the Caribbean Community (CARICOM) which is a good example of a regional grouping between microstates. Section 5 concludes.

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<sup>6</sup> Sandler (1992) defines Club as "... a voluntary collective that derives mutual benefits from sharing one or more of the following: production costs, the members' characteristics, or an impure public good characterized by excludable benefits."



## 2. The basic model

Imagine  $n$  microstates each of which needs to negotiate with  $m$  different foreign agencies, i.e., there are  $m$  issues. There are two types of negotiation costs. First, there are the “international costs”. For each issue, an entity incurs a negotiation cost,  $x$ , when dealing with a foreign entity. In case of an alliance between symmetric microstates, this cost is assumed to be equally shared between all members. The (per-issue) international cost incurred by a member of a  $n$ -country alliance dealing with  $m$  issues is written as:

$$(1) \quad C_I = \frac{x}{n}.$$

Obviously, this cost goes down as the number of participating members increases. In case of unilateral action by a country, the whole international cost is borne by that country, that is, a country acting unilaterally ( $n = 1$ ) pays  $x$ .

Second, countries forming an alliance incur “regional costs”. They consist of the costs of negotiation between the members in order to reach common policy stances. The “per-issue” regional cost is expected to be positively related to the group size and negatively related to the number of issues. Firstly, reaching an agreement becomes harder, thus more costly, as the number of participants rises. It could also be argued that the larger the group size, the more each country has to move away from its preferred positions in order to accommodate the group’s joint positions. Secondly, as the number of issues increases, the “per-issue” regional costs will

decrease due to scale and scope economies<sup>7</sup>. These economies are likely to be strong since, at the regional level, part of the negotiators are likely to remain the same people even though the issues are changing. Negotiation resources will be spread over different issues. As the number of issues increases, the degree of trust and familiarity between the negotiators will augment and thus, negotiations will become more efficient. Also, it is easier to make trade-offs between issues as their number increases<sup>8</sup>. The (per-issue) regional cost paid by a country dealing with  $m$  issues is written as:

$$(2) \quad C_R = (n-1)^\alpha \cdot y(m),$$

where  $y > 0$ ,  $y' < 0$ ,  $y'' < 0$ ,  $0 \leq \alpha \leq 1$ <sup>9</sup>.  $y(m)$  is the cost of negotiating with an individual partner country for each issue.  $\alpha$  is the elasticity of the regional costs with respect to the number of partner countries in the group or club. It represents the degree of similarity of the countries (e.g., language, legal framework, shared natural resources, main exports ...) and/or the degree of autonomy of the decision-making entity (the Secretariat)<sup>10</sup>. If  $\alpha = 1$ , the regional cost can be

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<sup>7</sup> Economies of scope are cost savings that arise when activities have a common cost (Sandler, 1992).

<sup>8</sup> For more on this argument, see Section 3.2. on log-rolling.

<sup>9</sup> For convenience,  $n$  is treated as a continuous variable, where  $n \in [1, n_{MAX}]$  and  $n_{MAX}$  is the total number of potential members. The regional negotiation cost,  $C_R$ , is normalized in such a way that when  $n = 1$ ,  $C_R = 0$ . Note that treating  $n$  as a discrete variable does not alter the main results of the analysis.

<sup>10</sup> One would expect the degree of autonomy of the secretariat to increase as the degree of similarity among the nations rises. Evidently,  $\alpha$  could also vary according to the issue being negotiated as well as over time. For simplicity, however, it is assumed that  $\alpha$  is a given constant.

written as  $(n-1) \cdot y(m)$ . This represents the case where countries are very different from each other, and a formal Secretariat is not established, but where the countries still act collectively, so that each country has to negotiate with each of the other  $(n-1)$  individual countries over the  $m$  issues. On the other hand, a small  $\alpha$  means that the countries are quite similar, and most of the regional policymaking is delegated to the supranational Secretariat. Therefore, the  $n$  countries do not have to conduct substantial negotiations between themselves and the group size becomes almost irrelevant. For  $\alpha = 0$ , (say in the case of countries forming a political union), the regional cost per country is minimized at level  $y(m)$ , and is independent of  $n$ . Note also that if a country acts unilaterally ( $n = 1$ ), its regional cost is zero. Finally, as can be shown from equation (2), the larger is  $\alpha$  --i.e., the more countries are different from each other-- the faster regional costs increase with an expansion of the group.

Putting the international and the regional costs together, a country's (per-issue) negotiation costs can be expressed as:

$$(3) \quad C(n, m) = C_I + C_R = \frac{x}{n} + (n-1)^\alpha \cdot y(m).$$

$\frac{x}{n}$  is convex while  $(n-1)^\alpha \cdot y(m)$  is concave in  $n$ , so that  $C(n, m)$  can either be concave or convex in  $n$ . However, when  $x$  is large or  $n$  is not too large, convexity will dominate (for instance, for  $n$  around 1,  $C(n, m)$  will be approximately  $\frac{x}{n}$  which is convex). In this paper,  $C(n, m)$  is assumed to

be convex in  $n$ , or  $C_{nn} > 0$ . Note from equation (3) that  $C(1, m) = x$ , i.e., a country negotiating unilaterally will save on regional costs but will have to pay the entire international negotiation costs.

The “gross” payoff that each country receives from acting unilaterally, denoted  $R(1)$ , differs from the payoff that it receives from acting collectively,  $R(n)$ . It is conjectured that the (per issue) gross payoff from collective action,  $R(n)$ , is an increasing and concave function of group size  $n$ . This reflects the “bargaining power” hypothesis (i.e., by negotiating as a group, the member countries get more influence on the world market and increase their bargaining power)<sup>11</sup>. It could also reflect the argument presented in the previous section that foreign investment and foreign aid are more attracted to a group of microstates acting collectively than to a multitude of microstates acting unilaterally partly because of lower transactions costs, partly because of more visibility as a group than as individual countries.

The “net” benefit of being a member,  $N(n, m)$ , is then written as:

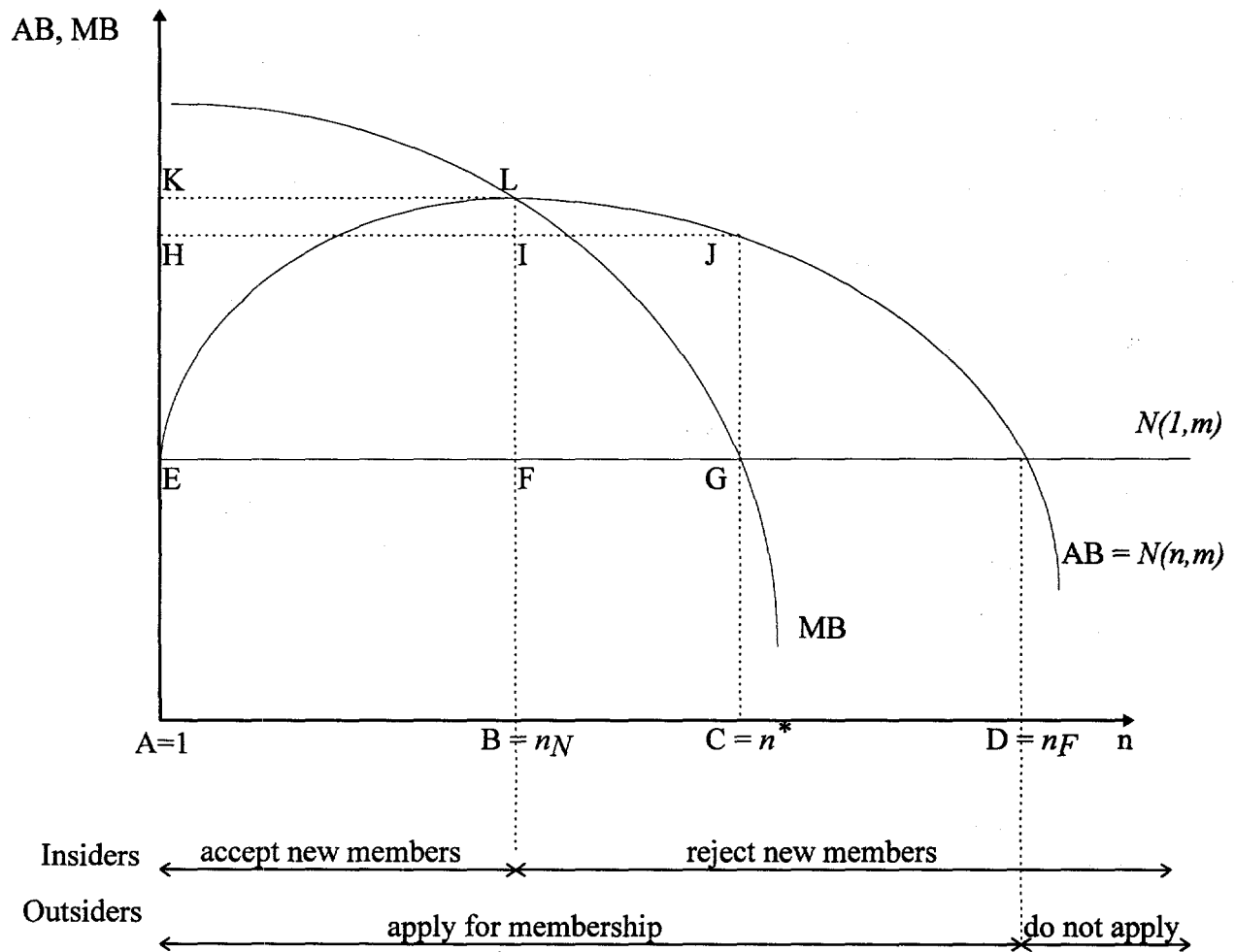
$$(4) \quad N(n, m) = m.[R(n) - C(n, m)].$$

Given the assumptions about the convexity of  $C(n, m)$  in  $n$  and the concavity of  $R(n)$ ,  $N(n, m)$  is concave (see Curve AB in Figure 1).  $N(n, m)$  is the objective function used in determining the

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<sup>11</sup> Members of the Cairns group are not microstates, but by coordinating their positions and putting them together coherently, they most likely lowered the group’s negotiation costs (most studies were done in Australia), and they obtained favorable results at the Uruguay Round: agriculture finally included in the negotiations, no QRs on agriculture by the EU and the US (only tariffs), and no new subsidies and commitment to lower old ones.

Figure 1: Equilibrium Group Size



equilibrium group size. Assume for now that the number of issues is fixed at some exogenous level<sup>12</sup>. For a given number of issues, a representative country will choose its preferred group size by maximizing its net-benefits, which yields the first-order condition:

$$(5) \quad \frac{\partial N(n, m)}{\partial n} = m \cdot (R_n - C_n) = 0 ,$$

where  $X_a$  denotes the derivative of  $X$  ( $X = R$  or  $C$ ) with respect to variable  $a$  ( $a = n$  or  $m$ ).

In terms of the group as a whole, the Total or Aggregate Net Benefit (TB) and the Average Net Benefit (AB) can be respectively written as:

$$(6) \quad TB = n \cdot N(n, m) = n \cdot m \cdot [R(n) - C(n, m)],$$

and,

$$(7) \quad AB = \frac{TB}{n} = N(n, m)$$

There are two types of players in the model: the “insiders” and the “outsiders”. The insiders are the countries that are already members of the club (or bloc) and are contemplating whether or not to let new members in. They will accept entry as long as they benefit from it. For any given  $n$  and  $m$ , an outsider will want to join an alliance if the net benefit associated with acting collectively is larger than that associated with acting unilaterally.

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<sup>12</sup> In the next section, the number of issues is endogenized.

The extra net-benefit to the group of admitting a new member or the Marginal Total Net Benefit (MB) can be expressed as:

$$(8) \quad MB = N(n, m) + n \cdot \frac{\partial N(n, m)}{\partial n}.$$

The socially optimal group size (for insiders and outsiders together) is defined as the point where the total net benefit for the insiders and outsiders is maximized, or where the marginal total net benefit (MB) to the group of an extra member equals the net benefit foregone by that new member,  $N(1, m)$ . The socially optimal  $n^*$  must, then, satisfy:

$$(9) \quad MB(n^*, m) = N(n^*, m) + n^* \cdot \frac{\partial N(n^*, m)}{\partial n} = N(1, m),$$

which is represented by point C in Figure 1. This assumes an interior solution. Such a solution will obtain as long as  $\alpha$  is not too small so that  $n^* < n_{max}$ , where  $n_{max}$  is the total number of potential members. In the extreme case where  $\alpha = 0$ , AB will rise continuously as  $n$  increases and  $N(n, m)$  would always be larger than  $N(1, m)$ . A corner solution would be obtained and the optimal size will be  $n^* = n_{max}$ .

It is important to realize that in the case of an interior solution, the optimal group size for the insiders and the equilibrium group size are not necessarily the same as the socially optimal size due to the presence of externalities. Outsiders seeking membership do not take into account

the effects of their action on the existing insiders. The equilibrium group size depends on the membership or entry conditions. Three such conditions are considered: Free or Open Membership, Selective Membership (without entry fee) and Selective Membership (with entry fee).

### ***2.1 Free or Open Membership***

Consider first the case where any outsider that wishes to enter a group can do so without any resistance from the insiders. The outsider would want to be a member as long as the net benefit associated with acting collectively is larger than that associated with acting unilaterally. Outsiders will seek (and will be granted) membership as long as:

$$(10) \quad N(n, m) \geq N(1, m).$$

This is represented by the range AD in Figure 1. The associated equilibrium group size,  $n_F$  will satisfy the above condition with an equality. In this case, the equilibrium group size is larger than the socially optimal one ( $n_F > n^*$ ) and than the group size which maximizes the insiders' welfare ( $n_F > n_N$ ). The group is too large compared to the optimum because the outsiders are entering the club without taking into account the congestion or negative externalities they impose on the insiders (beyond point L in Figure 1) by raising regional negotiation costs by more than they are lowering international negotiation costs and raising the gross benefit. The outsiders are dissipating all the potential welfare gains from forming a regional agreement. In Figure 1, the



loss to the insiders (from not being at the socially optimal group size  $n^*$  but at  $n_F$ ) is the rectangle EGJH. At the equilibrium, the outsiders are indifferent between acting unilaterally (and getting  $N(n_F, m) = N(1, m)$ ) and acting collectively (and getting  $N(1, m)$ ) so they neither gain nor lose. Relative to the optimum, the total welfare loss to the union is then the rectangle EGJH. Note that this case is identical to that of a common property resource (a fishery, road, open fields, etc.) where outsiders can enter freely and thereby drive the value of the resource down to zero. Compared to the situation where each country is acting unilaterally, this case offers no improvement in terms of welfare since the net benefit to each country, whether it is an insider or an outsider, is still  $N(n_F, m) = N(1, m)$ .

## 2.2 *Selective Membership without Entry fee*

Consider next the case where the insiders can choose whether to let outsiders in but cannot extract any side payments from them. On the one hand, the insiders will accept a new member as long as the entry of that country is favorable to them by increasing (or by not decreasing) the average net benefit (AB). This will happen for any  $n$  less than  $n_N$  at point B in Figure 1. On the other hand, an outsider will apply for membership as long as the net benefit associated with being a member ( $N(n, m)$ ) is more than the net benefit associated with being an outsider ( $N(1, m)$ ).

This is the case as long as the group size is less than  $n_F$  at point D. Consequently, the equilibrium group size is represented by point B which is the size that maximizes the net benefit  $N(n, m)$  for the insiders. Analytically, it can be computed, by setting the derivative of  $N(n, m)$  to zero, that the equilibrium group size,  $n_N$ , satisfies the condition:

$$(11) \quad \frac{\partial N(n_N, m)}{\partial n} = m.(R_n - C_n) = 0.$$

In this case, the equilibrium group size is smaller than the socially optimal size,  $(n_N < n^*)$ <sup>13</sup>. The reason is that the insiders are concerned with their own private welfare and do not take the potential gains for the new entrants into account. The insiders use their selective advantage to act like monopolists and choose a suboptimally small group size. In Figure 1, the insiders gain the area HILK for being at  $n_N$  and not at the optimal  $n^*$ . The outsiders experience a loss for being prevented from joining the group. This loss is represented by the rectangle FGJI. The global welfare loss is represented by the difference between FGJI and HILK, or alternatively by area FGL<sup>14</sup>.

It should be pointed out that this case offers some welfare improvement compared to the situation where each country is acting unilaterally. The gain is represented by EFLK in Figure 1.

The insiders capture all the gain, in this “second best” solution, since they are now getting  $N(n_N, m) > N(1, m)$  instead of  $N(1, m)$  which they would have gotten had they not formed a club.

### 2.3 Selective Membership with Entry Fee

In this last case, an outsider who wishes to join the club can induce the insiders to accept its membership by making some side payment. The insiders would accept the membership of the

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<sup>13</sup> This is, as in the previous case, assuming an interior solution.

<sup>14</sup> FGL is the difference between the marginal benefit of being an insider between  $n_N$  and  $n^*$  and the actual benefit as an outsider of  $N(1, m)$ .

new country as long as the payment is enough to cover (for each of the existing insiders) the decrease in the Average Net Benefit due to the new entry. In order to compensate the insiders, a new member has to pay at least (the negative of):

$$(12) \quad n \cdot \frac{\partial N(n, m)}{\partial n} = MB - AB ,$$

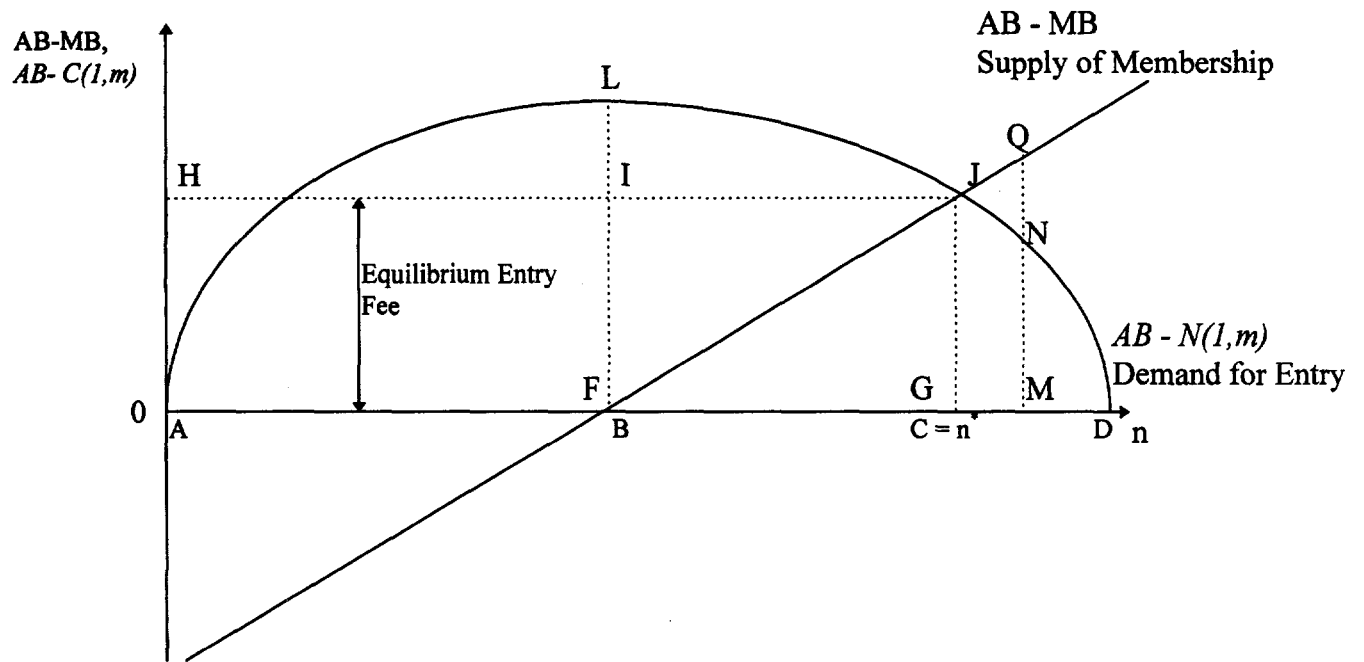
which is the negative externality imposed on the insiders and is equal to the vertical distance between the curves AB and MB beyond  $n_N$ . An outsider would be willing to make the payment as long as the Average Net Benefit of joining minus the amount of the payment ( $AB - \text{Payment} = MB$ ) is larger than the net benefit associated with acting unilaterally ( $N(1, m)$ ). An outsider's maximum willingness to pay is then the difference between AB and  $N(1, m)$ .

The determination of the equilibrium entry fee is shown in Figure 2 for ease of presentation. The demand (or the outsider's maximum willingness to pay) for membership is represented by the curve  $AB - N(1, m)$  and the supply by the curve  $AB - MB$ <sup>15</sup>. If the insiders are acting competitively, in the sense that they do not discriminate between different applicants, the equilibrium entry fee and the equilibrium group size are determined by the intersection of the two curves. The equilibrium entry fee, GJ, is the outsider's maximum willingness to pay at that particular group size and is also the minimum rate that the insiders are willing to accept from new members.

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<sup>15</sup>  $AB - MB$  is shown as, but not necessarily is, a straight line.

Figure 2: Determination of Equilibrium Entry Fee



In this case, there will be new entry up to point C which is the socially optimal size,  $n^*$ . In terms of Figure 1, between A and B, a newcomer does not make any payment since its entry is beneficial to the insiders in the sense that it increases the average benefits. Between B and C, any new member has to pay an entry fee of GJ. Beyond point C, outsiders will find acting unilaterally more attractive than joining the group since the insiders would charge them more than what they are willing to pay (for instance, at point M in Figure 2, outsiders are willing to pay NM but insiders require  $MQ > MN$ ). The equilibrium group size is at point C.

The possibility of taxing the newcomers for the negative externalities that they impose or, alternatively, the possibility for outsiders to compensate the insiders by paying an entry fee, generates the socially optimal group size by resolving the collective action problem. On the one hand, the fact that a newcomer has to pay to get in limits the chances that the club becomes inefficiently large. On the other hand, the fact that an outsider can get in by paying reduces the chances that the group becomes inefficiently small. The total welfare loss (with respect to the optimal group size) is then equal to zero. Compared to the case where no payment was allowed (Section 2.2.), the insiders gain FGL and the outsiders lose nothing so that the total welfare gain is FGL. Finally, compared to the case where each country acts unilaterally, this “first best” solution offers a welfare improvement which is represented by EGJH. All of this gain is captured by the insiders. Outsiders always receive  $N(1, m)$ . In terms of Figure 1, the “new” insiders (between B and C) pay GJ and receive CJ, with a net benefit of  $CG = N(1, m)$ , i.e., the “new” insiders do not gain. The entire efficiency gain accrues to the “original” insiders.

Baldwin (1993) presents a domino theory of regionalism where bloc formation increases the willingness of outsiders to join. However, he does not examine the willingness of insiders to let outsiders in. In this paper, we examine both the incentives of insiders and outsiders. Once two countries form a bloc, since  $AB$  increases initially, other countries will want to join and the insiders will be willing to let them in. This will happen up to bloc size  $n_N$  where  $AB$  is maximized, and up to the socially optimal bloc size  $n^*$  if the outsiders are allowed to pay an entry fee.

It should be stated that the above analysis is implicitly based on the assumption that the outsiders do not take the initiative (or do not have the option) to form another club of their own. If they were allowed to do so, then the outsiders would stop applying for membership to an existing group once the size of the latter reaches  $n_N$  (the size which maximizes  $AB$ ) regardless of the membership condition because they could form an alternative group of size  $n_N$ . As a result, more than one bloc of size  $n_N$  could emerge, depending on the size of  $n_{max}$  relative to  $n_N$ . The assumption made in this paper is, however, legitimate if it is further assumed that the expansion of a group's membership is incremental or sequential ("one new member at a time") and not simultaneous ("one shot"). This is in fact the case for CARICOM (see Section 4)<sup>16</sup>. Under this situation, it is always advantageous for an outsider to join a  $n_N$ -member group rather than to start a 2-member club with another outsider.

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<sup>16</sup> Note that this also holds for various RIAs among non-microstates. Argentina and Brazil first started integrating, and then Uruguay and Paraguay decided to join them. In Europe, Belgium, Netherlands and Luxembourg formed the BENELUX, then with France, Germany and Italy created EC-6, then came EC-9, EC-10, EC-12, EC-15, etc. Similarly, Canada and the US formed CUSFTA, then later formed NAFTA with Mexico.

## 2.4 Comparative Statics

The following implications follow directly from the above analysis and apply to each one of the three cases considered.

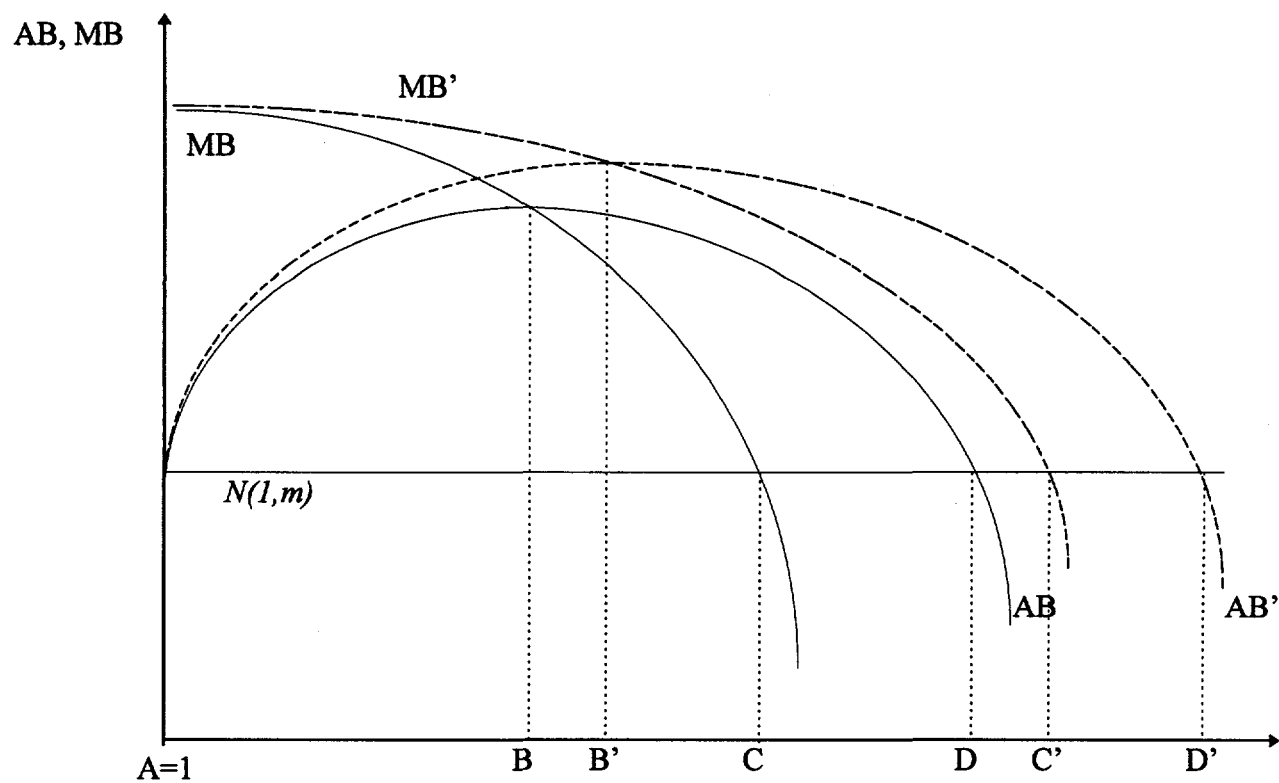
(i) The equilibrium group size increases with the number of issues ( $m$ ). Most microstates have limited administrative, managerial and negotiating resources. Thus, as the number of issues increases, countries will tend to seek regional cooperation. An increase in the number of issues expands the AB and the MB schedules to the north-east (to AB' and MB' respectively), as is shown in Figure 3, and that, in turn, increases the equilibrium group size irrespective of the existing membership condition (from B, C, and D to B', C' and D' respectively)<sup>17</sup>. Algebraically, it can be calculated that an increase in  $m$  (causing a decrease in  $y(m)$ ) will increase  $n^*$ ,  $n_F$ , and  $n_N$  respectively<sup>18</sup>. This reflects the presence of “economies of scope” at the regional level. Due to the presence of fixed costs (same negotiators-different issues), “per-issue” negotiation costs will decrease as the number of issues increases.

(ii) The equilibrium group size increases as the degree of similarity among the countries or the degree of autonomy of the Secretariat increases (or  $\alpha$  decreases). Institutional arrangement affects the behavior of the countries. As  $\alpha$  decreases, it does not cost as much to reach a common position (i.e., regional costs decrease). As a result, joining a club becomes more attractive and the equilibrium group size rises in each of the three cases discussed above.

<sup>17</sup> It is not shown but all three curves (AB, MB and  $N(1, m)$ ) in Figure 3 are also shifting up.

<sup>18</sup> Using (11) we get  $\frac{\partial n_N}{\partial m} = \frac{C_{nm}}{R_{nm} - C_{nm}} > 0$ .

Figure 3: Comparative Statics: Increases in  $m$  or a decrease in  $\alpha$





Graphically (Figure 3), the AB and the MB schedules expand to the north-east and the different equilibria (B ,C ,D) shift to the right (to B' , C' , D' respectively). It can also be demonstrated algebraically that a decrease in  $\alpha$  will raise  $n^*$ ,  $n_F$ , and  $n_N$  respectively<sup>19</sup>. As  $\alpha$  decreases, the savings on international costs (being shared by more members) become more important than the increase in regional costs (arising with a larger number of members). In the extreme case where  $\alpha = 0$  (the Secretariat is completely autonomous or the countries are very similar), acting collectively would always be more attractive than acting unilaterally and having more members would always be more advantageous than having fewer members. In this case, the group size will be the maximum size possible as AB is increasing asymptotically with  $n$ .

From a dynamic standpoint, assume that as member countries negotiate jointly over time, the degree of trust in each other rises, and  $\alpha$  falls, i.e.,  $\alpha = \alpha(t)$ ,  $\alpha' < 0$ . Then,  $n^*$ ,  $n_F$ , and  $n_N$  will rise over time. See, e.g., the case study of CARICOM in Section 4. Alternatively, it could be assumed that, for a given  $m$ ,  $y(m)$  falls over time as the regional negotiation process becomes more and more efficient. In this case also, one would see  $n^*$ ,  $n_F$ , and  $n_N$  rise over time.

(iii) The equilibrium group size increases as the per-issue international negotiation costs increase or the regional costs decrease for any given number of issues ( $x$  increases or  $y(m)$  decreases). Changes in the negotiation costs affect the incentives of countries to undertake collective action. For instance, when the international negotiation costs rise, countries gain more from forming a regional grouping by sharing the now-larger international negotiation costs.

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<sup>19</sup> Using (11) we get  $\frac{\partial n_N}{\partial \alpha} = \frac{C_{n\alpha}}{R_{nn} - C_{nn}} > 0$ .

Graphically, the AB and MB schedules in Figure 3 move to the right and down and  $N(l, m)$  goes down (not shown). This results in an increase in the equilibrium group size irrespective of the entry condition. Algebraically it can be shown that an increase in  $x$  (and a decrease in  $y(m)$ ) will increase  $n^*$ ,  $n_F$ , and  $n_N$  respectively<sup>20</sup>.

(iv) The equilibrium number of issues increases with the group size. This result is shown in Section 3.1 below.

### 3. Some Extensions of the Basic Model

In the next two subsections, we extend the basic model by endogenizing the number of issues.

#### 3.1 Endogenous $m$ and $n$

In this case, a representative country simultaneously chooses its preferred group size and number of issues by maximizing its net-benefits. For simplicity of exposition, we will consider the case where membership is selective and there is no entry fee so that the decisions regarding the group size and number of issues is up to the insiders. For a given  $m$ ,  $n = n_N$  in this case (see Section 2.2). The solution under other entry conditions can be obtained by analogy. Maximization of net benefit with respect to  $n$  and  $m$  yields two first order conditions:

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<sup>20</sup> Using (11) we get  $\frac{\partial n_N}{\partial x} = \frac{C_{nx}}{R_m - C_m} > 0$ , and  $\frac{\partial n_N}{\partial y} = \frac{C_{ny}}{R_m - C_m} < 0$ .

$$(13) \text{ Club Size} \quad \frac{\partial N(n, m)}{\partial n} = 0, \text{ and}$$

$$(14) \text{ Number of issues} \quad \frac{\partial N(n, m)}{\partial m} = 0.$$

The first condition (Club Size) gives us the equilibrium group size for a given number of issues or  $n_N(m)$ . It can be shown that as the number of issues increases,  $n_N$  increases as well.

Totally differentiating (13), we get:

$$(15) \quad \frac{\partial n_N}{\partial m} = \frac{C_{nm}}{R_{nn} - C_{nn}} > 0,$$

where  $X_{ij}$  denotes the second (or cross) derivative of  $X$  ( $X = R$  or  $C$ ) with respect to variables  $i$  and  $j$  ( $i, j = n$  or  $m$ ).

The second condition (number of issues) yields the preferred number of issues for a given group size or  $m^*(n)$ . The number of issues is a positive function of the club size. Again, by totally differentiating (14), we can get:

$$(16) \quad \frac{\partial m_N}{\partial n} = \frac{R_n - C_n - m.C_{nn}}{2.C_m + m.C_{mm}},$$

The sign of the above expression is in general ambiguous but around the equilibrium (where  $R_n - C_n = 0$ ), it is positive. This implies that a country acting unilaterally would have fewer issues than a group of countries acting collectively and that an increase in the club size would raise the preferred number of issues. A member of a larger group is able to share the fixed (per issue) international negotiation costs with its partners and would prefer dealing with more issues in order to take advantage of the cost sharing and the economies of scope associated with the larger number of issues.

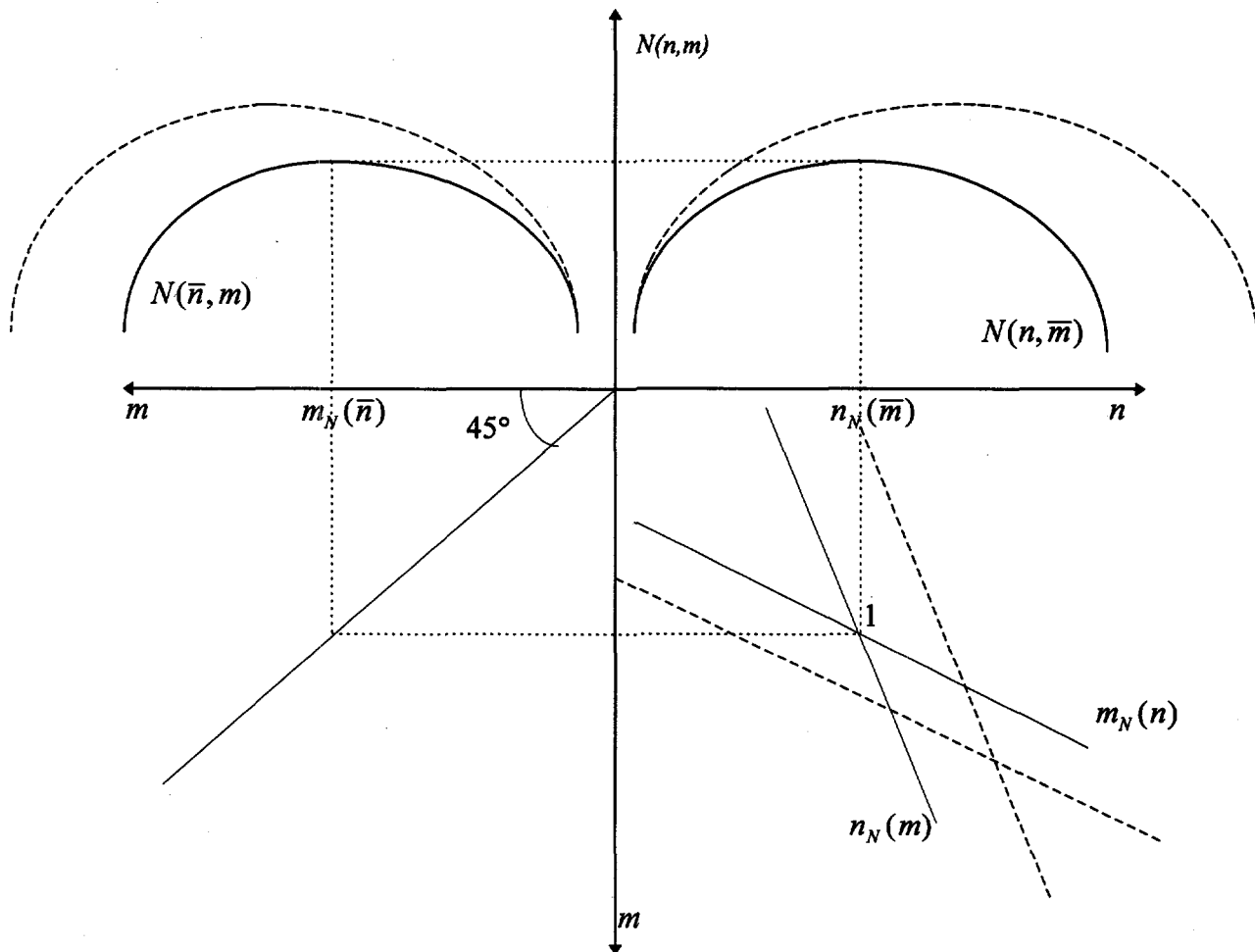
A very simple graphical depiction of this exercise is offered in Figure 4. The first (North-East) quadrant presents the average benefit as a function of  $n$ , for a fixed number of issues,  $m$ . By using different values of  $m$ , this yields the positive relationship  $n_N(m)$  that is shown in the second (South-East) quadrant. In a similar fashion, the fourth (North-West) quadrant determines the equilibrium number of issues  $m$ , for a given club size  $n$ . The resulting positive relationship  $m_N(n)$  is shown in the second (South-East) quadrant<sup>21</sup>. The resulting system of two equations with two unknowns allows us to solve for the group size and the number of issues. The equilibrium is given by point 1 in the south-east quadrant.

Consider now the effect of an increase in the degree of similarity among the countries (a decrease in  $\alpha$ ). In the first quadrant,  $N(n, \bar{m})$  will expand to the north-east and the equilibrium  $n$ , for a given  $\bar{m}$ , moves to the right. As a result, the curve  $n_N(m)$  in the second quadrant will shift to the right. Similarly,  $N(\bar{n}, m)$  will expand to the upper-left and the equilibrium  $m$ , for a given  $\bar{n}$ , moves to the left in the fourth quadrant. Accordingly the curve  $m_N(n)$  in the south-east

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<sup>21</sup> As far as stability is concerned, it can be computed that the slope of  $n_N(m)$  is less than the slope of the inverse of  $m_N(n)$ .

Figure 4: Simultaneous Determination of  $n$  and  $m$



quadrant shifts down. The resulting change is a multiplier-type effect on  $m$  and  $n$  as is shown in Figure 4. The new equilibrium is denoted by point 2. A greater similarity among countries, therefore, will increase both the group size and the number of issues.

The effect of an increase in the international negotiation costs ( $x$ ) can be shown to be the same as that of a decrease in  $\alpha$ .  $N(n, \bar{m})$  in the first quadrant moves down and to the right and  $N(\bar{n}, m)$  in the fourth quadrant shifts to the left. . As a result, the curve  $n_N(m)$  in the second quadrant will shift to the right and  $m_N(n)$  in the south-east quadrant shifts down. This will in turn increase both the number of issues and the group size as the countries want to take advantage of the cost sharing between members as well as the economies of scope due to larger number of issues.

### 3.2 “Log-rolling”

So far, countries have been assumed symmetric. In this section, countries differ in terms of the issues they are concerned with. In many cases, a union sometimes bargains with outside parties over issues that are of direct concern only to some of its members. Some countries may not even have a national position on certain matters. Still, those members who are not directly interested in the issues are likely to prefer that the bargaining process does not break down. One reason for this is that a breakdown of negotiations over one issue might entail failure in all the other issues. The formation of a regional grouping between countries with different interests allows the countries to “trade” or to “sell” their support for issues that are important to other members in

exchange for support for issues that are important to themselves. This logrolling between the member countries can end up giving each country what it could not get on an unilateral basis<sup>22</sup>.

This issue is very relevant in foreign policy coordination between independent microstates. CARICOM countries, for example, used this “exchange of support” method to get Caribbean nationals elected to key international positions such as Commonwealth Secretary-General and ACP Secretary-General. On some issues, it is possible that the group delegates the formulation of the joint regional position to a subgroup of its members if no other members are interested in the issues<sup>23</sup>.

We can modify the basic model to take the logrolling issue into account. To make the point clear, we consider the extreme case where each country cares only about one issue and that the issue is different for different countries. Therefore, the number of countries will always equal the number of issues or  $n = m$ . As before, suppose that an individual country receives a gross payoff of  $R(n)$ ,  $R > 0$ , from its issue. We can rewrite the net benefit that a country gets by joining a  $n$ -member group as:

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<sup>22</sup> This parallels the concept of “issue linkage” in that cooperation on one issue depends on cooperation on other issues. Spagnolo (1996) finds that linking different policy games helps sustain more policy cooperation given that the issues are substitutes with respect to the governments’ objective functions. He also finds that cooperation on different issues are also easier to sustain when they are “excludable” in the sense that any single deviant player can be effectively punished by excluding her from the gains from cooperation while the other players go on cooperating.

<sup>23</sup> The issue of delegation of authority is addressed by Gatsios and Karp (1989, 1995) in a different framework. They find that “... delegation [to set a common external policy] either to a union member or a supra-national agent affects the union’s best response function ...” and can increase a member’s economic welfare. They also show that if it is optimal to delegate, then the more “aggressive” union member will be chosen to set the joint external policy stance.

$$(17) \quad \begin{aligned} \tilde{N}(n) &= R(n) - n \cdot C(n), \quad \text{or,} \\ \tilde{N}(n) &= R(n) - n \cdot \left[ \frac{x}{n} + (n-1)^\alpha y(n) \right] \end{aligned}$$

The first term on the right hand side is just the gross benefit that a country gets from its own issue given that the  $n-1$  other countries are supporting it. The second term is the total cost which could be interpreted as the cost of international negotiation ( $x$ ) plus the cost of agreeing to play and of actually playing the logrolling game<sup>24</sup>. In this case, a country might be willing to lend support to its fellow members' position over issue  $i$  --even though it gains nothing from that particular issue-- as long as it knows that the other members will do the same over issues that do not concern them directly<sup>25</sup>. From this standpoint, the possibility of logrolling makes collective action more likely and the benefits of being a member of a large group larger.

Outsiders will be applying for membership to a  $n$ -member club so long as they can gain from collective action relative to acting unilaterally, or:

$$(18) \quad \begin{aligned} \tilde{N}(n) &> \tilde{N}(1), \quad \text{or,} \\ R(n) - R(1) &> n \cdot (n-1)^\alpha y(n). \end{aligned}$$

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<sup>24</sup> For convenience, the cost of agreeing to play the game is assumed to have the same specifications as the regional costs that we have used in previous sections. This does not have to be the case.

<sup>25</sup> This could be modeled as a "trigger strategy repeated game": As long as everybody plays truthfully, the logrolling process will run smoothly and each country will get what it could not get by itself. If the intertemporal discount rate is small enough, the result would take the form of self enforcing "implicit contracts" and cooperation would be the equilibrium outcome.



On the other hand, if membership is selective, insiders will accept new membership as long as the new member does not make them worse off, or:

$$(19) \quad \frac{d\tilde{N}(n)}{dn} = R_n - (n-1)^\alpha \cdot y(n) \cdot [1 + \frac{\alpha}{n-1} - \varepsilon(n)] \geq 0,$$

where  $\varepsilon(n) = -\frac{y'(n) \cdot n}{y(n)}$  is the elasticity of the function  $y(n)$ .

Note that if  $n$  is large enough and  $\varepsilon(n) > 1$ , then the above expression will always be unambiguously positive. That is, an increase in the club size will always be beneficial for the insiders and hence collective action would always be preferred to unilateral action (irrespective of entry condition). In this case, the club will grow until it includes all potential members.

#### 4. Case Study: CARICOM

This section presents a case study of the Caribbean Community (CARICOM) which exemplifies the regional approach to international relations by “microstates”. All fourteen CARICOM member states experience the problems of political and economic viability that are engendered by extremely small size<sup>26</sup>. Due to their sizes, the CARICOM economies were characterized by (i) acute external dependence, (ii) limited administrative and managerial resources, (iii) costly

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<sup>26</sup> The CARICOM countries are Antigua and Barbuda, the Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago and the non-independent territory of Montserrat. Only Jamaica and Trinidad and Tobago have populations that exceed one million.

provision of socio-economic infrastructure and services due to unfavorable economies of scale, (iv) constraints imposed on economic decision-making by small domestic markets and limited productive resources, and (v) extreme vulnerability to military or other security threats. Regional integration has, thus, long been identified as an essential element in the strategies for survival and development adopted by these countries.

CARICOM was established sequentially. The original Treaty establishing CARICOM was signed in 1973 by Barbados, Guyana, Jamaica, and Trinidad and Tobago. By mid-1974, seven more countries (Belize, Dominica, Grenada, St. Lucia, St. Vincent, the Grenadines, and Montserrat) had joined after considerable negotiation. The Bahamas was accepted as a new member in 1983. In 1991, the British Virgin Island and the Turks and Caicos Island were granted Associate Membership. Suriname acceded to membership in 1995.

The main problem confronting CARICOM is the small size and the undiversified nature of the economies of its member nations. Accordingly, even if the trade barriers between the members were completely abolished, the level of intra-regional trade would likely still be quite small. IADB (1995) reports that “trade within CARICOM has been minimal, and intraregional investment is virtually nonexistent”. From its creation in 1973, aggregate intra-CARICOM exports have accounted for around 10 percent of the area’s total exports.<sup>27</sup>

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<sup>27</sup> Recognizing the limitations of CARICOM in the area of economic integration, Caribbean leaders decided to form a new organization for economics and trade called the Association of Caribbean States (ACS) in 1994. The members of this new grouping would be the 25 countries of the Caribbean Basin. The ACS would have a total market of around 200 million persons, with an estimated Gross Domestic Product of US\$500 billion, and annual trade worth some US\$180 billion. (IADB, 1995)

However, CARICOM has often served as an effective political instrument in joint negotiations on trade and investment with larger countries or regional trade blocs. (Byron, 1994; IADB, 1995) CARICOM includes provisions for economic cooperation on fiscal and monetary policy, as well as joint planning for industrial development. It also encompasses a number of agencies of functional cooperation, which provide essential socio-economic services on a pooled regional basis. It was intended to equip the region, an English-speaking enclave in a largely Spanish-speaking area, with a more powerful voice and presence to defend its interests in international affairs.

In a nutshell, the group has three main areas of activity: economic integration; cooperation in non-economic areas (e.g., health, education and transport) and the operation of certain common services; and the coordination of foreign policies of independent member states.

Despite the last area, political integration is not envisaged. Foreign policy coordination was particularly active in four areas: the negotiation of preferential access to European and North American markets<sup>28</sup>; attempts to obtain consistent and remunerative commodity prices; obtaining larger flows of concessionary finance to the region; and finally a heightened profile for the Caribbean in multilateral institutions in order to voice the concerns of the regional states on the issues of economic, environmental and territorial security (Byron, 1994). In none of these areas would a small country acting unilaterally, have been successful. Clearly, the number and nature of the issues to be dealt with made the establishment of CARICOM and the formulation of a

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<sup>28</sup> The main issue here is whether CARICOM will continue to enjoy privileged access to European Markets (under the Lome Convention and the GSP), the USA (under the Caribbean Basin Initiative) and Canada (under CARIBCAN).

“CARICOM position” necessary. CARICOM countries were/are involved, among other things, in the ACP-EU, GATT/WTO, UNCTAD, UNCLOS (UN Conference on the Laws of the Sea) negotiations as well as in various commissions or joint councils with Cuba, Canada, Japan, Mexico, US, the FTAA, the OAS, the G3 (Mexico, Venezuela, Colombia), the SELA, and many more. A microstate would hardly have sufficient human, physical or financial capacities to unilaterally conduct fruitful negotiations in so many areas.

CARICOM members have varying degrees of development which made regional negotiations often difficult. Within CARICOM itself, the smaller territories (the seven small Eastern Caribbean territories) continued their own institutional arrangements for an economic and political subgrouping which evolved into the tightly integrated Organization of Eastern Caribbean States (OECS). The creation of the OECS considerably enhanced their individual administrative capabilities, and their collective bargaining weight, both within CARICOM and internationally.

The region acquired bargaining power at the very highest level of North-South politics. Representatives of CARICOM countries took the lead in formulating and articulating the positions of the ACP Group in the negotiation of Lome Conventions. By trading each other's support, the CARICOM nations succeeded in getting their nationals elected to key international positions such as Commonwealth Secretary-General and ACP Secretary-General<sup>29</sup>. In the process, they ensured that the region's interests in the areas of commodity trade and development

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<sup>29</sup> It should be noted that the CARICOM candidate lost out to Argentina for the post of President of the United Nations General Assembly in 1988. The CARICOM countries also failed to secure any seats on the governing board of UNESCO in 1989. (Byron 1994)

cooperation were taken into account. They also consolidated multilateral links with other parts of the developing world, and established themselves as full participants in the activities of the United Nations, despite that organization's earlier ambivalence on the issue of microstate membership. CARICOM countries focused on getting the U.N. organs to address the development needs of small island developing states. Finally, they succeeded in collectively negotiating an impressive range of preferential market access (e.g., CARIBCAN with Canada, CBI with the USA , and GSP (along with other developing nations) with the EU).

## **5. Conclusions**

This paper analyzes the circumstances under which a regional grouping between microstates would emerge. The simple model used focuses on negotiation costs and bargaining power rather than on the traditional "static" costs and benefits analysis of regional integration. This is legitimate because, given the small size of the countries concerned, as well as the limited number of products produced and their similarity, trade integration itself could only produce minuscule costs or benefits. Microstates are likely to gain more, and thus be more concerned with saving on international negotiation costs and having a larger voice in the international arena. Even if our focus is on microstates, our analysis is general enough to be applied to many other areas (e.g. developing countries, Cairns group, nation building ...).

Our model is simple (without being simplistic) and intuitive. Yet, the analysis provides and formalizes many useful insights. It is found that the equilibrium group size depends on the existing entry condition. Free membership or free entry leads to an inefficiently large group due

to the congestion caused by the newcomers. A selective membership without the possibility of side payment, on the other hand, leads to an inefficiently small group. The possibility for the outsider to make compensation payments to the insiders, or alternatively the possibility for the insiders to charge the outsider an entry fee, takes care of the externalities and yields a socially optimal group size.

Irrespective of the entry condition, it is shown that the likelihood of a cooperative solution between microstates, as well as the equilibrium group size, increase as the number of issues to be tackled increases. An increase in the degree of similarity between the countries also is associated with an increase in the group size. Also, an increase in the international negotiation costs, as well as a decrease in the regional costs, raises the likelihood of collective action and expands the group. A simple extension of the basic model shows that the possibility of trading each other's support on different issues (logrolling) makes collective action even more likely and easier to sustain.

The particular case of CARICOM was then examined to see the relevance of the model in the real world. Despite its relatively limited trade and investment impacts, CARICOM was successful in serving as a political instrument in joint negotiations on trade and investment with larger countries and regional trade blocs. By establishing a union, the CARICOM countries succeeded in making their voices heard on a variety of issues in a way that none of them could have done unilaterally.

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